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MENTAL EXAMINATION OF TWO THOUSAND DELINQUENT BOYS AND YOUNG MEN

M. L. Beanblossom

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Mental Examination of Two Thousand Delinquent Boys and Young Men.

By
M. L. Beanblossom, A. M.

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Mental Examination of Two Thousand Delinquent Boys and Young Men

The material which furnishes the basis of this dissertation was worked out among the inmates of Indiana Reformatory through a period of three and one-half years. Subjects are male, varying in chronological age, with an occasional exception, from sixteen to thirty inclusive. The examination was given as soon after their arrival at the Institution as was deemed advisable for the best results. Usually a period of three weeks elasped before the examination was given. This gave ample time for rest and composure and has proved satisfactory. As far as possible, the examination was avoided when the subject was for any reason, whatsoever, physically unfit. In case it became necessary to give the tests under unfavorable circumstances, a special classification was given and explanation noted. Ordinarily only one examination was given each subject, but, if for any reason, the first was unsatisfactory, then one or more subsequent examinations were given. In conjunction with the regular mental investigation, a detailed statement of personal, hereditary, and environmental data was obtained. This not only aided materially in a correct mental diagnosis, but was of immediate value to the Institution.

The plan of this paper is two-fold; first to suggest what we have found to be some of the more valuable psychological tests for mental diagnosis, especially for adults and those nearing that age, and give our method of evaluating them; secondly, to present as concisely as possible a statistical resume of results obtained.

Not only have we been dealing with a cosmopolitan group of individuals of every race and tongue, but among the two thousand subjects, we have had "dope" fiends, alcoholics, syphilitics, neurotics, epileptics, psychopaths, feeble-minded, dements, deaf-mutes, sexual perverts, "moral imbeciles"* (if such a condition exists), albinos, mulattos, dwarfs (physical), and so forth; or any composition of two or more of the foregoing, which is responsible for our having had nearly every possible combination of physical, moral, and mental anomalies and eccentricities. Because of such a diversity of material, it was necessary to devise a rather inclusive means of classification. After a number of attempts and revisions, the following scale was found to be practicable for institutional purposes as well as furnishing an adequate system for research.

*Tredgold's "Mental Deficiency", William & Wood Co., New York, 1914.

A.....good mentality
B.....fair mentality
C.....poor mentality
D.....subnormal
E.....moron*
F.....imbecile
G.....specialized defective
H.....dull from somatic causes
I.....psychosis
U.....unclassified

An individual to be graded "A" must show rather exceptional ability. He must possess an intelligence capable of any reasonable training or acquisition with that width of mental grasp and acuteness of thought characteristic of the successful professional and business man. A specific case illustrating this type is number 4568, who is twenty-seven years of age and of Jewish-Russian parentage. He was born in Chicago soon after the parents arrived in the United States. Having completed the second year high school and reached his majority, he came to an Indiana city to accept a position as manager of a rather important firm. He was prosperous and succeeding well with his work when one day the opportunity came to appropriate to personal use several hundred dollars of the company's money. The investment which he made with this and other money which he had saved was a failure and consequently he could not square himself with the firm. For this, he is now serving time for embezzlement. Since coming to the Institution, he has completed a course in stenography and typewriting. He has held various clerical positions in different departments of the Institution and acquitted himself competently. While here with the exception of an attempt fraudulently to pass mail out of the Institution, his record has been good. On the examination the majority of the tests were passed with ease and excellence.

It must be remembered in this connection, that a number of the "A" individuals have not had as much school training as the above example, while others have had more. In no case, however, has an illiterate been given this classification, because it is thought that a person in this day of enlightenment would have acquired at least a reading and writing knowledge by the time he has reached sixteen, which is the admissable age required by this Institution; even though he has had no school opportunities.

An individual capable of high school training and college work, but with a more or less limited capacity is graded "B." The amount of training for the "B" type averages less than for the "A", but as in "A" no illiterate has been graded "B." Regardless of the limited school opportunities, one of this mentality should be able to pick up at random the simplest processes of learning. He is easily capable of learning a trade or business towards which he is inclined, but often finds adaptability and initiation to new work a trifle difficult. This type usually drops out of school

*As used by Goddard.

about the eighth grade to engage in business or learn a trade. Occasionally, one of this grade has had mediocre success in professional or clerical endeavors. Number 5849, who is nineteen years of age, classifies under this heading. He took advantage of training up to the seventh grade and dropped out to learn the tailor's trade. His parents having died before he was ten, he drifted to Indianapolis where bad companionship aided materially in causing him to commit the crime of highway robbery. Since his arrival at the Institution he has been doing good work in the tailor shop and has completed the eighth grade in school. So far, his institutional record is good. Upon his release he will likely continue through life at his chosen trade.

The "C" grade represents a rather distinctive type of boy, who has made little success at learning a trade or conducting a business. It is only very rarely that a profession is even attempted. In school, if he reaches high school, the work is poorly done. Often he abandons school rather early because of his inability to cope with the brighter pupils and the subsequent embarrassment of failure in promotion. Only in extreme cases is an illiterate graded "C." This type is able to learn a simple trade that requires little initiative. It is frequent that one of this class is engaged in making chairs or brooms, or in learning some other trade of a similar nature, which, when the routine is once established, he settles down with a machine-like attitude and is perfectly content. A good example is 7938, who is now on parole. He is a native of Scotland and attended school there until he withdrew at the fourth grade after having twice failed in promotion. At the age of twenty-one he came to the States and to Indiana, where, until his commitment, he worked in a coal mine. While at the Institution he made fair progress in school up to "percentage," when he was withdrawn. He worked at moulding, a trade requiring little initiative after the fundamentals are once learned. With the exception of some trouble over short work, his institutional record was clear. Upon his release from here, he took work in a factory in Indianapolis and has been doing well.

The "D," a still lower type, represents the borderline between poor mentality and definite feeble-mindedness. This fellow rarely learns even a simple trade. Only infrequently does he advance as far as the sixth grade and is often illiterate. This is the type that usually drifts from trade to trade and from job to job because he is unable to give satisfaction to his employer. He profits little by the experience he has had, finally settling down to general labor and, if physically able, is content to do heavy manual work. An illustration of this grade is number 2018, who was born in a western state and was moved about by his parents until they settled somewhat permanently in this State. He was in school five or six years but only reached the third grade. Before his commitment he usually worked as farm hand, and had been arrested twice on minor charges. After being duped into burning a barn for a man who wished to collect an exorbitant fire insurance, he served a three-year term. At the Institution, he was withdrawn from school after having had sufficient opportunity and failing to make satisfactory advancement.

In his work, he was transferred from shop to shop and finally assigned to a job shoveling coal. Since his release, he has been giving satisfaction as farm laborer for a man near his home.

Our "E" grade is much the same as Goddard's moron type. This fellow usually knows something of the simplest processes of learning, but very frequently is illiterate. He never learns a trade and seldom makes a good work-hand, because of the close supervision required. A good example of this type is number 4828, a colored fellow of southern birth. In school, he barely learned to read and write and to do the simplest arithmetic. At the age of eleven when his mother died he wandered away from home and found work on a railroad section. He went from place to place, working only enough to buy meagre food and raiment, tramping or stealing his rides, until he was arrested in Evansville for felony and committed to this Institution. Since his arrival, he attended school for nearly four months but made little advancement. He has worked at various places in the Institution, but gave best satisfaction as street sweeper. After being released it is probable that he will manifest the same "wanderlust" disposition as prior to coming to the Institution.

The newer definition of the imbecile ("F" class) created by the Mental Deficiency Act* of the English Parliament, correlates more closely with our classification. The definition is as follows: "Persons in whose case there exists from birth or from an early age mental defectiveness not amounting to idiocy, yet so pronounced that they are incapable of managing themselves or their affairs, or, in case of children, of being taught to do so." The few imbeciles whom we have, are, for the most part, of a higher grade. The Institution not being specially prepared to handle such low grades of mentality fails to help them very much in any way. This fellow usually comes to us illiterate and leaves us unchanged. As with his schooling so with his work—he cannot learn a trade. A good example of this type is number 5998, whose father died early leaving a large family. The mother and children now live in an Indiana city and the former washes as a means of support. Subject attended school for a short time only and withdrew because he could not learn. Data concerning family and personal history were difficult to obtain from him because of low mentality. Prior to coming to the Institution, he worked at ordinary labor and did odd jobs which he could get to do. He was committed to this Institution for attempting to commit rape upon a girl six years of age. Soon after his arrival, he was assigned to school, but given up as uneducable, being of such a low grade that he could not even learn the way to and from school. He has worked at various light laboring jobs, but because of unsatisfactory results was assigned to the "fresh air squad" (a group of individuals mentally and physically unfit for regular work). He has not been refractory, but just troublesome and worrisome. When released from the Institution, he will again be a burden upon society and will likely become prey for the more intelligent and less conscientious individuals.

*Tredgold, op. cit.

Our "G" classification, the "Specialized Mental Defective," refers to the individual with a rather permanent defect which has materially retarded normal development. The cause of the defect is not always overt for it may be the result of heredity, early environment, an accident, or combination of two or more of these. An example of Specialized Mental Defective is number 3697, who has an unstable attention, but who is otherwise normal. There is a case of petit mal that we have thus classified. There is a deaf-mute in the Institution who has had an eccentric and one-sided development and consequently cannot well be classified under a normal heading.

Individuals of this class are at such wide variance that no one case can be cited as typical. Suffice it to say that these are special cases and must, therefore, receive individual diagnosis and treatment.

With the "H" group, we have a rather temporary and purely somatic handicap. This condition may be brought about through dissipation of some sort—alcohol, "drugs," sexual perversion, being more common forms of it. However, if the abnormality has become well founded through a period of time, then a more or less permanent derangement follows and the subject is classified under another heading. Occasionally, a fellow passes through the laboratory who has not fully recovered from a major operation or serious disease, e. g. syphilis. In any case, there must be an allowance made for such incapacity and a later examination held before a definite classification can be given. A concrete example in this case is unnecessary.

The "I," psychosis type, refers to any marked mental degeneration or perversion. It represents mental defect and insanity versus mental deficiency. This classification includes both neuronic degeneration and perversion of neuronic functioning. One of the chief differences between this group and the ament group is in origin:—the former developing largely after birth and the latter being chiefly ante-natal. Tredgold* compares the dementia and perversion group to an individual in a state of bankruptcy and the ament group to an individual who has never had a banking account. A person coming into the Institution with an "I" tendency and remaining through a considerable lapse of time, usually leaves in a worse condition. Through observation, it appears that long confinement is especially harmful to a disarranged or impaired mind. A good illustration of the psychosis is number 7698, a Virginia negro, who, because of "wanderlust" left home early and drifted about until he was committed to the Institution on a felony charge. Before leaving home he made fair progress in school, finishing the eight grades. On the outside he usually worked at hotels for short periods of time or other light work which he could obtain. While employed at a hotel in Detroit he married, but deserted his wife after a short time because of pregnancy. At the Reformatory, as previously, he made unsatisfactory progress toward learning a trade and caused considerable disciplinary trouble. The mental examination was passed with good results. Upon entering the Institution he was a syphilitic and later had an attack of epilepsy. After several months, perversion of neuronic functioning became evi-

*Mental Deficiency.

dent and he was soon afterwards transferred to an Indiana insane hospital.

In the "U" grade we place all who were, for some reason, not given a satisfactory trial. This may have been due to unfamiliarity with English; to continued interruption from without; to a lack of time; to a break in the examination; or to a lack of faithful co-operation on the part of the subject. However, of the two thousand cases, there were only a very small per cent that were graded "U" because of a lack of friendly attitude toward the examination. In a large majority of these cases subjects showed anxiety to obtain good results and often competition could be used to good advantage. Once in a great while, it became necessary, at first, to do a little prodding, but the subject usually showed good subsequent interest and, on the whole, obtained normal results.

From the foregoing institutional cases, it may be seen that there exists a vital relation between the type of intelligence and the kind of vocation. When one has learned of an individual's career and occupation, he already has much valuable information toward a correct mental diagnosis. However, it must be remembered that infrequently an individual's ambition, because of some misfortune, is turned aside and consequently unrealized. Yet, if the elements of will and emotion are working in unison with those of intellect, much may be accomplished in the face of unfavorable circumstances. As has been suggested elsewhere, Experimental Psychology is sadly lacking in tests and data for the emotional and conative factors.

Tests and Their Evaluation

Considering the chronological age with which we have had to deal, the Binet* scale, in and of itself, did not give us an accurate mental classification. We were convinced of this fact during the early history of the laboratory, by re-examinations and comparison of subject's progress in school and in learning a trade. However, this scale contains several valuable tests that have been used by us with a fair degree of success. Also, the lower the mental type the more of the scale that could be advantageously applied. Of these tests the following were more frequently employed:

I. From Ten Year Tests
   1. Drawing design from memory
   2. Repeating digits
   3. Forming a sentence from three given words

II. From Eleven Year Tests
   1. Forming a sentence from three given words
   2. Free association (number of words in three minutes)

III. From Twelve Year Tests
   1. Repeating digits
   2. Definition of three abstract words
   3. Repeating sentence of twenty-four to twenty-six syllables

*The Goddard revised scale was used.

IV. From Fifteen Year Tests
   1. Changing clock hands
   2. Code
   3. Twenty easy opposites
V. From Adult Tests
   1. Cutting paper
   2. Reversed triangle
   3. Difference of abstract words

It may be well to indicate at this juncture how the various types of mentality succeeded with the above tests. All of these tests were not given each person examined, but occasionally only one or two of them; many times, even more; depending entirely upon the type of individual that was being examined. Also, the fact cannot be too strongly impressed that a diagnosis was never based entirely upon the Binet alone without the aid of supplementary tests. Again, the clinician soon finds that sharp lines cannot be adhered to in diagnosis, for frequently a failure occurs with a comparatively simple task, while elsewhere, good results may have been obtained. Judgment and experience are continually taxed in rendering a fair decision. Consequently what may be said in the following paragraphs as to the above tests and their relation to the mental type is only suggestive and cannot be accepted unquestionably en masse.

An "A" individual will usually pass all of the above tests. On the sixty-word test, he scores anywhere from one hundred to one hundred and fifty words; is able to repeat eight to ten digits and frequently eleven; does the code without any previous experience with the Healy-Fernald* "B cross-line;" but may fail to measure up to the standard on one or two of the Adult tests.

The "B" type usually passes Fifteen, with the exception of one or two in this year, for which he makes up in the Adult. On the sixty-word test, his score varies from eighty to one hundred and twenty words; repeats eight or nine digits, and does the code with ease, providing the "B cross-line" has first been given. Depending upon the individual's proclivity, he will either do the paper-cutting test or give the differences of abstract words.

The "C" may miss one in the twelfth year and possibly two in the fifteenth, averaging better than Twelve, but rarely as high as Fifteen. With the sixty-word test, he makes a score between seventy and one hundred; he repeats seven digits and occasionally eight; but sometimes fails to repeat twenty-six syllables, and is unable to succeed with the code. He may either do the easy opposites or "change" the clock hands.

The "D" grade usually fails on one or two of each of the eleventh and twelfth years, but may possibly succeed with one from the fifteenth. He either barely succeeds with the sixty-word test or fails to pass it. The successes and failures in repeating seven digits are about equal. He is rarely able to repeat twenty-six syllables, and failures on some of the simpler tests of earlier years is not at all a surprise.

*Psychological Monograph, March, 1911, Vol. XIII.

The moron or "E" usually passes two or three of the eleventh year and occasionally one of the twelfth. He may fail on one or more of the eight, ninth, and tenth years. He rarely passes the sixty-word test, but may repeat six digits. He cannot repeat twelve syllables correctly, and often fails to draw the geometrical designs. The successful efforts are scattered from Seven to Twelve inclusive. As a general rule, the lower the type, the more erratic, inconsistent, and widely scattered are his results.

The imbecile or "F" type fails on very simple tests and occasionally passes one that causes surprise. For example, one individual who was graded as imbecile, named more than a hundred words on the free association test. His responses, qualitatively, were not so good, for they were largely automatic. Our "F" type usually averages about Nine on the Binet system.

The "G", "H", "I", and "U" types are eccentric, springing all sorts of surprises on the examiner by succeeding where success was least expected and failing where success was most anticipated. The "G" shows some special abnormality, while otherwise functioning is just about normal. The "H" gives results depending largely upon the quantity and quality of the debility. The "I" generally shows fair to good quantitative results, but the quality is often poor. This is seen more clearly in the association, memory, and attention tests. The Binet scale is, as a rule, more unsatisfactory for the "U" type than any other.

As has been suggested, the supplementary tests were found absolutely essential as a means toward an accurate diagnosis. Virtually every psychological test was given a try-out or used in one form or another. However, eventually, the matter was sifted down to a few tests which were peculiarly adapted to our purposes and which have since been in constant use. But, nevertheless, it was necessary to have a rather wide selection of tests at hand to meet the requirements of such widely divergent types. It will only be necessary to enumerate and evaluate a few of the more important supplementary tests. They may be taken in the following order:

1. A-test
2. Dot test
3. Motor co-ordination test
4. Comprehension or understanding printed instructions
5. Inset board
6. Instruction box
7. Information
8. B cross-line
9. Controlled association
10. Aussage test

The A-test with a four-letter variation has proved to be very valuable and has been extensively employed. The higher types performed the A-test in one minute and fifteen seconds without an error. But this test showed, likewise, poor results and various combinations of speed and accuracy. Whether the subject emphasized speed or accuracy was

significant in the diagnosis of the case. Also if more mistakes were made in the beginning of the test, it indicated automatism; if more mistakes were made near the end, it showed fatigue. However, this feature was only accepted in a general way and was usually verified by other tests.

In conjunction with the A-test, the dot test was many times given. This was brought into use through the suggestion of Professor Stevens of the University of Chicago. The arrangement is the same number of dots, in the same position, and on the same size of paper as the A's in the above test. The subject was first given the A-test, then the dot test and the difference in time would be the time of perception, since the latter test requires only co-ordinated movement with a minimum of perception. The best types averaged thirty seconds for the dot test.

The motor co-ordination test,* as used by Doctors Healy and Fernald, was often employed to a good advantage. The best results for the first trial, were one hundred and fifteen squares without an error. Generally speaking, the lower the type of individual, the more sluggish the reaction and the more inaccurate the results. This and the dot test have a high correlation.

The test for the comprehension or understanding of printed instructions as devised by Woodworth and Wells,* was modified to suit our particular needs. The test as employed in this laboratory consists of forty-six printed sentences to be interpreted and answered or completed by the subject. This test is more valuable for the fair to poor mental types who can handle English sufficiently well. The best score was made in two minutes and ten seconds without an error.

The Inset Board as designed by Dr. Witner of the University of Pennsylvania has been used during the past year with a fair degree of success. It makes a more elaborate and more advanced test than the Goddard Form Board and has the advantage that it can be satisfactorily given to a wider range of subjects. Time, only, is counted, but the method of procedure which is very important is always noted. There is a distinct difference in method of approach between the lower and higher types of intelligence. Three trials are given and the best average to date is twenty-five seconds. Besides its value as a purely mental test it may prove to be an aid for vocational guidance.

The Instruction Box* as suggested by Professor Jastrow and designed by Doctors Hayes, Healy and Fernald has given satisfaction, especially with the higher types. The best results average twenty-five seconds, one trial and no errors. One handicap to the entire success of this test with the material with which we have to deal is, occasionally, a subject does not try to open the Instruction Box for fear of being suspected as a professional "safe" robber. In such cases, it is evident that they observed the similarity between the arrangement of this test and regular combination safes. Hence, if they succeeded with little difficulty, they sometimes conjectured that they would be classed as experts in the crime, the manipulation of which most resembles the

*Psychological Monograph, March, 1911, Vol. XIII.

performance of this particular test. Generally speaking, however, the boys manifested good interest and good effort in this test.

The Information test was planned to suit the needs of this laboratory and consists of thirteen questions to be answered and twenty-three words to be explained. They concern, largely, present day places, persons, and events which, at least, should be common knowledge. This is not, however, a good mental test, but throws light upon general intelligence and training, showing something of the power of acquisition, retention, and general interests. Very ridiculous replies are often given. It is not uncommon to hear that Moses is the father of Jesus; that the largest city in the world is some town in Indiana; or that Shakespeare was a great general. This test covering such a wide range suggests many things concerning the individual's training and environment, in addition to giving information as to subject's general intelligence.

The "B cross-line"* as suggested by Doctor MacMillan and employed by Healy and Fernald has been especially valuable to us as a preliminary to the code of the Binet scale. The "A," "B," and "C" types nearly always succeed with this test without much difficulty, and occasionally even a lower grade may execute it after considerable time and effort. Ordinarily, the test was not given to the lowest and highest types.

For the Controlled Association test, the Kent-Rosanoff** list of words was used. This was found to be of special value to the aberrant and lower mental types. Of three hundred and forty cases examined the average time for each response was three and eight-tenths seconds. The per cent of normal reactions ranged higher than the results given by Kent and Rosanoff in their study of association among the insane. A statistical statement of our results will be given in another part of this paper.

The Aussage or Fidelity of Report test, as originated by Stern† and given publicity in America largely through Whipple's Manual, was found to be of general importance for us. It was usually found true, as was suggested by Binet, that the higher types gave a more comprehensive and interpretative report; the middle types gave a good descriptive report, but not so comprehensive and full; the lower type did little more than enumerate some of the things that had been seen. The lower the intelligence, generally speaking, the more suggestibility was displayed, which was also a characteristic of the dementia and perversion groups.

In addition to the tests designed more especially for mental classification, several educational tests were used for the purpose of obtaining a more accurate statement of subject's previous training. There are at least three reasons why the statement of the inmate could not be entirely relied upon for this information. First, school systems of different states and countries and even city and country schools in the same locality vary widely; second, many subjects are unable to recall accurately when they entered school or how long they were in attendance; third, a mislead-

*Psychological Monograph, March, 1911, Vol. XIII.
**American Journal of Insanity, Vol. 67
†Beitrage zur Psychologie der Aussage, Leipzig, 1903-1906.

ing statement, for some reason or other, was sometimes purposely made. Besides being directly valuable for school classification within the institution, these tests were helpful in a general way, at least, toward the mental diagnosis. The following tests were sufficiently used and found to be of practical value: Courtis* Arithmetic Tests, "Measurement in Efficiency of Reading," by Starch;† and Trabue's‡ Language Scale. None of these tests has been in use by us more than eighteen months and consequently we have not obtained a great deal of statistical material. From casual judgment, it does not seem that there will be any marked differences between our results with the educational tests and the results of the originators with normal individuals. Our subjects manifest better interest for the arithmetic and language scale tests and usually with better subsequent results.

It might be asked just why the preceding tests were employed; why others were not used, and the purpose of giving each individual test. The selection of tests is largely determined empirically. They answer the demands of the rather unique material with which we have to deal, and give us a fairly accurate mental diagnosis. The aim is to have the examination so complete that the entire mental life will be covered. The order of procedure was left entirely to the discretion of the examiner and depended largely upon the mentality of the subject and his general attitude toward the examination. Since the results of each test are given in the preceding statements and in the following tables, and more especially in Table IX, further elaboration at this juncture is unnecessary.

If one should inquire why each test was given, it can be said that they have served the purpose intended by the founder of the particular test. To illustrate, the Instruction Box told us something of the condition of memory and imagery, ability to learn, and aptitude in following directions. The cutting of folded paper as given in the Binet scale gave us an insight into subject's ability to reason, perception of form, type of imagery, and general mental inclination. Again the Binet code gave the examiner information as to subject's alertness, memory, kind of imagery, ability to plan and reason, together with other information of a minor nature. The Inset Board showed subject's ability in correlation and association, in perception of form, in profiting by experience, in planning and so on. Since so much literature has been produced concerning the various tests, it would be trite to go into further detail concerning the value and purpose of the various tests.

Statistical Statement

It is the aim of this part of the paper to give in a succinct manner some of the results obtained from our examinations. Many other possible statistical combinations, which might have been given, were omitted for want of space and time. This section should be more particularly of

*Department of Cooperative Research, Detroit, Michigan.
†Journal of Educational Psychology, January 1915, Vol. VI.
‡Bureau of Publication, Columbia University, N. Y.

interest to students of clinical research. The order in which the tables are numbered and appear have no special significance. Sufficient explanation will be added in connection with each table to aid the reader in a ready comprehension of the material.

The following table shows the number of individuals of each mental grade and their corresponding chronological age. For example, of the two thousand cases examined, there were eleven individuals who were of the "A" grade and sixteen years of age; twenty of the "B" grade who were sixteen; thirty-five of the "B" grade who were seventeen; etc. The percentages of each mental grade and chronological age are also given.

Table I.

Mental Grade

	AGE	A	B	C	D	E	F	G	H	I	U	Total	%
C	16	11	20	12	15	11	0	1	0	1	1	72	3.60
h	17	20	35	33	13	14	0	3	1	2	1	122	6.10
r	18	25	49	39	26	22	0	1	2	5	4	173	8.65
o	19	28	59	42	23	20	1	2	3	3	7	188	9.40
n	20	30	46	40	33	17	0	1	1	0	5	173	8.65
o	21	25	56	41	36	25	2	2	2	3	5	197	9.85
l	22	28	46	49	30	13	1	4	4	4	5	184	9.20
o	23	27	56	40	29	13	0	1	2	1	6	175	8.75
g	24	20	38	32	25	19	1	2	1	3	4	145	7.25
i	25	17	29	24	22	17	0	1	2	2	4	118	5.90
c	26	18	38	20	22	11	0	2	2	1	2	116	5.80
a	27	15	25	23	19	11	0	1	0	2	6	102	5.10
l	28	14	30	25	18	6	0	1	4	1	8	107	5.35
	29	12	25	15	15	10	1	0	3	3	1	85	4.25
A	30	4	6	3	5	3	1	0	1	1	1	25	1.25
g	31	0	1	3	1	2	0	0	0	0	0	7	.35
e	32	0	2	7	0	0	0	0	0	2	0	11	.55
		294	561	448	332	214	7	22	28	34	60	2000	100%
		14.70	28.05	22.40	16.6	10.7	.35	1.10	1.4	1.7	3.0	100	%

Table II.

Kohs* found the following percentage distribution of amentia:

	Idiots	Imbeciles	Morons	Total
Feeble-minded and kindred institutions	1.07	14.68	14.74	30.49
In penal and kindred institutions	0.00	0.55	14.44	14.99
At large	0.33	4.05	50.16	54.54
Totals	1.40	19.28	79.34	100.02
Our results	0.00	0.35	10.70	11.05

*The Journal of Delinquency, May, 1916.

Approximately thirty per cent of our "D" grade are high grade morons and if that were added to 10.70, our "E" grade, the results would compare favorably with what Kohs found for penal and kindred institutions.

It can be observed from the above table that of the two thousand cases (counting the "U" boys as having fair mentality) fifty-four per cent are graded poor mentality or lower; while less than fifteen per cent are good types. More than eleven per cent are distinctly feeble-minded, while twenty per cent are in the borderline or doubtful groups, totaling thirty-three per cent as either subnormal or nearly subnormal. Practically two per cent became insane, with twice that number developing milder cases of dementia and perversion. The majority of the three per cent which were unclassified remained so because of their inability to use English, while the minority of these remained so because of reconsideration by the court, transfer, death or some other similar reason. Of the two thousand cases nearly ten per cent are twenty-one years of age, while nearly fifteen per cent grade fair mentality.

Table III.

The following correlations were worked out on a basis of one hundred cases, which were, as nearly as possible, consecutive:

		P. E.
1. Inset board and easy opposites	.59	.0395
2. Inset board and memory for digits	.56	.0424
3. Inset board and association (sixty-word test)	.73	.0260
4. Memory for digits and association (sixty-word test)	.63	.0356
5. Estimated mentality and association (sixty-word test)	.83	.0164
6. Estimated mentality and easy opposites	.75	.0239
7. Trabue completion test and easy opposites	.68	.0308
8. Trabue completion test and adding	.60	.0385
9. A-test and dot test	.68	.0308
10. A-test and easy opposites	.55	.0433
11. A-test and comprehension of printed page	.63	.0356
12. Dot test and comprehension of printed page	.65	.0337

It will be noted from the above table that association tests correlate rather highly with mentality. But since the association tests were used in conjunction with other tests in determining the mental status, this would presuppose, at least, some correlation. However, considering the large number of tests used in determining mentality, the above correlation still must be fairly accurate. Mlle. Descoeudres* with feeble-minded children, found a correlation between the sixty-word test and estimated intelligence .50, which is much lower than our results. However, this would probably be accounted for by diversity of conditions and subjects.

Performance on the Inset board correlates higher with association tests than memory tests, and this is what one should really expect, when the nature of the tests is considered.

Simpson** found a correlation of .50 between easy opposites and the

*Arde Ps., 11, 1911, 351-375.
**Correlation of Mental Abilities, Columbia Publication.

A-test, which is not as high as the above results. We find a still higher correlation between the A-test and dot test.

Simpson estimates the correlation between easy opposites and intelligence of people in general to be as high as .82; Bonser* obtained a correlation of .85; Doctor Weidensall† at Bedford Hills Reformatory, reports .79; while our results show .75.

Between the Ebbinghaus completion test and easy opposites, Simpson gives a .72 correlation; while between the Trabue completion test or language scale and easy opposites, we find a .68 correlation. Our results show a still lower correlation between Trabue completion and adding tests.

More and more it becomes clear that there is no marked difference between the basic mental structure of the delinquent and people in general. However, there are more aberrations and anomalies of functioning among criminals than people in normal society. Also, special defects are more common and more varied than one will presumably find among people of a similar social status outside of prison. Then there are the many anomalies of will and emotion that must be considered, for they play a very important role in the life of a criminal. The foregoing statements are evidenced by the preceding correlations, the various tables given (especially Tables II and III), and the delinquent's reaction to the various tests. Also such conclusions are corroborated by one's general experience and observation with the criminal class. As Havelock Ellis‡ says, "The criminal in some of his most characteristic manifestations is a congenitally weak-minded person, whose abnormality, whilst by no means leaving the mental aptitudes absolutely unimpaired, chiefly affects the feelings and volition, so influencing conduct and rendering him an anti-social element in society." Dr. Goring in his book, "The English Convict",§ epitomizes as follows: "Our final conclusion is—that the one vital mental constitutional factor in the etiology of crime is defective intelligence." After all, what has sometimes been designated as moral idiocy or moral imbecility may prove to be, upon more careful diagnosis, a result of some mental defect. It may be poor judgment, weak will or some anomaly of emotion or some abnormal combination of two or more of these. In the case of habitual criminals, Tredgold§§ says: "In some it may be a defect of judgment, in others a weakness of volition, in others a derangement of the associative and ideational functions, leading to the presence of irresistable impulses; but that some degree of mental defect is present can hardly be doubted, since the individual is quite incapable of foregoing a momentary satisfaction for a permanent advantage." Barring the criminal by accident or mishap, all other delinquents, and especially recidivists, surely have some sort of mental defect, overt or recondite.

*Reasoning Ability of Children, Columbia Publication.

†Whipple's Manual, Volume II, page 85.

‡The Criminal, Walter Scott, London, 1902.

§Darling and Son, London, 1913.

§§Mental Deficiency.

Table IV.

Norms from Two Hundred Inmates

	Mean	S. D.	Coef. of Variability	RANGE Poorest	Best
Memory span (auditory digits)	7.18 digits	1.08	.15	5	11
Cancellation, A-test (five seconds added for each error)	133.8 Sec.	27.90	.20	227	82
Cancellation, dot test (one hundred reactions)	51.8 Sec.	10.19	.19	98	33
Association, sixty-word test (three minutes allowed)	77.86 words	19.70	.25	43	150
Comprehension (ten seconds added for each error)	396.9 Sec.	107.20	.27	685	143
Inset (average of three trials)	46.28 Sec.	13.40	.28	94.7	25
Tapping (average of three thirty-second trials)	198.4	25.60	.12	75.4	310.2

Comparing the results of Table IV with other similar investigations, there is a variance, but not as wide as one might have suspected. For instance, the score for tapping, 198.4, is not so far below 220.4, which Wells* gives for normal individuals who were near the limit of practice. Bingham‡ gives a higher median (211.6) for college freshmen with a closer range (151.8 to 278.4), which compared with the above results shows inmates to be of more divergent types.

But for memory span of digits we found a slightly higher central tendency with a narrower range than Bingham,‡ who reports a median of seven and range of five to twelve for Dartmouth Freshmen. As early as 1887 Jacobs** reported for younger individuals a memory span for auditory digits ranging from 6.6 to 8.6 with an approximate average of 7.6. Again the mean is higher with a narrower range than for our subjects. So with the majority of the results from Table IV, it is clear that there usually exists a rather wide range with a more normal central tendency.

Table V a.

The Kent-Rosanoff stimulus words were given to three hundred and forty inmates of Indiana Reformatory with the following results:

‡F. L. Wells, Normal Performance in Tapping Test, Amer. Journal of Psych., 19, 1908.
*W. V. Bingham, Some Norms of Dartmouth Men-Jour'l of Ed. Psych., March, '16, Vol. VII.
**Experiments in 'Prehension', Mind 12; 1887.

Mentality	Number of Cases	% Common Reactions	% Doubtful Reactions	% Individual Reactions
A	49	85.83	2.0	12.17
B	95	84.47	2.2	13.33
C	75	83.55	2.1	14.35
D	58	81.24	4.2	14.56
E	36	74.28	3.8	21.92
Misc.	27	77.15	4.1	18.75

The number of failures was a minimum as a result of returning to the stimulus word after the entire list of one hundred words had been given. What few failures occurred were counted in the "doubtful" reaction class. The above results compare favorably with the results obtained by Eastman and Rosanoff‡, who report 84.00% common reactions from their study of delinquents. Our results show that the lower the type of intelligence the lower the per cent of individual reactions. Experimenters are generally agreed that children give a larger number of individual reactions than adults, which may be additional proof that there is a very close relationship between the chronologically older individual who is feeble-minded and a child; and that, after all, it is the mental age that is significant. Kent and Rosanoff‡‡ found a larger per cent of common reactions among normals and a smaller per cent of doubtful and individual reactions than our results show. This probably indicates nothing more than that our average intelligence is lower than the average intelligence of the subjects used by them. For the insane, Kent and Rosanoff found only 70.7% "common" reactions which is lower than for our poorest grades.

Table V b.

The following table shows the chronological age distribution for the Kent-Rosanoff association test:

Chronological Age	Number of Cases	% Common Reactions
16	14	83.37
17	19	77.38
18	29	74.73
19	32	80.11
20	29	76.42
21	35	79.33
22	31	80.04
23	30	83.05
24	26	81.83
25	22	78.25
26	20	85.43
27	17	80.55
28	18	87.22
29	14	82.71
30	4	84.00

‡Association in Feeble-Minded and Delinquent Children, Am. J. Ins. 69; 1912.
‡‡Association among the Insane, Am. J. Ins. 67; 1910.

Glancing over the preceding table it may be seen that there is, at least, no vital relation existing between the chronological age and the quality of the response; being in contrast with table Va where there is more or less definite relation between the nature of the response and the mental age of the individual.

Table V c.

Average time of response for each grade.

Grade	Av. Time in Seconds.
A	2.65
B	3.00
C	3.56
D	3.87
E	4.05
F	5.15
Miscellaneous	4.82
Average	3.87

The average reaction time for our best types with the Kent-Rosanoff association test is higher than what Whipple* found for college students. He gives a range of average times between 1.00 and 2.75 seconds. When a more intelligent inmate gave a slower response, it was usually true that such response was planned, which naturally required more time. Ordinarily, however, with the lower mental types association time was slower with the possible exception where erratic or automatic responses were given.

Table VI a.

The following table shows the average reaction time for performance on the Inset Board for each grade of mentality. These results are computed on a basis of five hundred individuals and the average of three consecutive trials for each individual was recorded.

Mentality	Number of cases	Average in seconds
A	75	43.2
B	175	48.2
C	125	52.4
D	55	66.1
E	30	92.7
Misc	40	57.6

There is a rapid rise in the time curve from "D" to "E" and a minor rise from "C" to "D." As there are no other results available for the Inset Board, the comparison must be omitted. Future investigation will probably corroborate the above results by showing a fair correlation between performance on the Inset Board and estimated intelligence. As was shown in Table III, our results give a fair correlation between this and the better established mental tests.

*Manual of Mental and Physical Tests.

Table VI b.

Average deviation is computed on a basis of fifty from each grade of mentality.

Mentality	A. D. in seconds
A	5.6
B	11.4
C	9.1
D	13.4
E	35.4
Misc	13.6

Generally speaking the deviation is less for higher types, showing the tendency to aberration of the lower grades. If there is any difference in the time of the manipulation of the Inset Board in relation to the chronological age, the younger boys showed a tendency towards lower average of time. The average time for sixteen and seventeen years was 58.4 and 49.8, respectively; while for twenty-nine and thirty years, the average was 63.5 and 64.2, respectively. Elsewhere, the probable outlook for the Inset Board has been suggested; however, the standardization which is to follow shortly will give us an insight into its value as a mental test.

In a general way, there exists a relationship between the type of intelligence and the kind of criminal activity. Through continued observation, it is found that the lower grades of intelligence engage largely in petty thievery; the more brutal assaults, in one form and another; arson; unnatural sex offenses, etc.; while higher grades are committed on charges of forgery, embezzlement, coining, manslaughter, and horse-stealing. However, this alone could not be counted upon as a safe criterion for intelligence, for justice is often so canny and laws and courts, in different sections, are at such wide variance that this theory is not always reliable. Yet, often the type of crime correlates well with the type of intelligence and for less authoritative purposes, is valuable information for the diagnostician. Again, if the same offense is commited by widely divergent mental types; with the higher type the monetary or advantage consideration, as a rule, is much larger for the more intelligent individual. In this connection Dr. Goring* gives the following results.

Table VII.

Of those committing various offenses, the following per cents are mentality defective:

	%
Firing stacks	52.9
Doing willful damage to property or maiming animals	22.2
Arson	16.7
Rape	15.8
Robbery	15.6

*The English Convict, Darling & Son; London, 1913.

Unnatural sex offenses.....14.3
Blackmail.....14.3
Fraud.....12.8
Stealing.....11.2
Burglary.....10.0
Murder.....9.5
Receiving stolen goods.....5.1
Manslaughter.....5.0
Coining.....3.3
Striking superior officer.....2.7
Forgery and embezzlement.....0.0

In comparison with Table VII, we have computed the following results, from a study of five hundred cases based upon the more frequent crimes. The "F" type and miscellaneous groups ("G," "H," "I," and "U,") occur so infrequently and for the latter, especially, the results were so erratic that these grades were omitted in the computation of this table.

Table VIII.

	A	B	C	D	E
Assault and battery to kill	1.2	3.1	1.2	9.2	4.6
Grand larceny	25.0	26.1	16.6	11.1	11.1
Petit larceny	24.3	41.1	42.8	39.1	57.5
Burglary	2.5	1.0	7.1	3.7	7.6
Felony	13.9	7.3	15.4	12.9	7.6
Forgery	17.7	9.6	5.9	3.7	4.6
Robbery	7.5	3.1	2.4	7.4	2.4
Rape	1.2	2.1	2.7	7.4	4.6
Manslaughter	0	2.1	3.5	3.7	.0
Receiving stolen goods	1.2	2.1	1.2	1.8	.0
Embezzlement	1.8	1.4	1.2	.0	.0
Horse stealing	3.7	1.0	.0	.0	.0

Glancing at Table VIII, it will be observed that from "A" to "E" there is a gradual increase, though not always uniform, in such crimes as assault and battery to kill, petit larceny, burglary, rape, and manslaughter; while there is a gradual falling off in the number of cases of grand larceny, forgery, embezzlement, and horse stealing. Of the other crimes mentioned in the preceding table, there is an indication of the absence of correlation, and of these, consequently, prediction is less certain. In the main, however, the results of this laboratory agree with those of Dr. Goring, though very different the methods of estimating intelligence and widely divergent the customs of conviction and punishment for the same offense may have been. Statistics of this nature are only meant to be suggestive and not to be accepted verbatim as entirely authoritative.

The following table gives a cross-section of a general relation found to exist between test performance and grade of mentality. The perpendicular columns give an estimate of how the various types usually succeed with the different tests.

Table IX

	A	B	C	D	E	F
Drawing designs	X*	X	Probably	Usually fails	**	
Sixty-word test	Max. 150 in 3'	80 to 120	70 to 100	60 to 80	Barely 60	Below 60
Auditory memory for digits	Maximum 11	8 or 9	7 or 8	6 or 7	Barely 6	5
Repetition of auditory syllables	Maximum 30	26	20 to 26	Not above 20	Less than 20	
Changing clock hands	X	With difficulty	Usually fails			
Code	X	With aid of B cross-line	Usually fails			
Easy opposites	Perfect	Usually passes	May succeed	Usually fails		
A-test	1' 15" no errors	1' 40" 1 or 2 err.	2' 10" 4 err.	3' 0" Sev. err.	3' 15" Sev. err.	4'10" Many err.
Dot test	30"	50"	65"	70"	85"	100" & upward
Motor co-ordination	115 sqrs no err.	80 to 100 1 error	70 to 90 3 errors	60 to 80 Sev. err.	50to70 Many err	40to60 many err
Comprehension	2'10" no errors	3' 15" 2 errors	4' 20" 3 or 4 err.	5' 25" Sev. err.	7' or more M. E.	8' minim. M. E.
Inset Board	25" (Av 3 trials)	38" Av. 3 trials	Av. 48"	Av 65"	Av. 70" [***	75" minimum
Instruction box	25" first trial; no errors	With difficulty on 1st Dem.‡	Probably after 2nd demonstr.			
Information test	Higher type answers	Fair	Fair to poor	Poor.	Very poor	
B cross-line	Easy	X	X	Probably	Usually fails	
Kent-Rosanoff association test	1' 15" good responses	1' 50" fair responses	2' 10" fair responses	3' 15" poor responses	4' 10" suggestible	5' 30" minimum suggestible.
Aussage test	Interpretative replies	Interpretative or descriptive	Largely descriptive	Descriptive or enumerative	Enumerative	Poorly enumerative

*Success **Failure ***Many Errors ‡Demonstration

The preceeding table is given in this condensed form only for the convenience of the reader. It does not make any dogmatic claims, whatsoever; neither is it by any means the last word. It only modestly aims to predict, in a general way, what some of the reactions of the various grades of mentality may be when called upon to respond to stimuli arising from a few of the more common tests. Of the miscellaneous groups ("G," "H," "I," and "U"), their results are so widely divergent and erratic that their performance cannot even be approximately indicated, and, consequently, these have been omitted from the above table.

In addition to the special mental attributes, there are certain distinctive characteristics common among criminals which for want of better terminology may be called "personal traits." Of these, the more prominent ones are egotism, resignation or fatalism, and sex perversion and unnatural love affairs. These are largely brought about by an unfavorable home environment and the abnormal conditions which confinement necessitates. As to egotism, they are not modest in speaking of themselves, of their physical strength, and their mental ability. They are willing to take a chance at some occupation though it be considerably above their ability to execute. The spirit of adventure, which is closely allied to egotism, is not uncommon and is apparent when they not only show willingness but anxiety to work in positions requiring great hazard and risk. Also, they may be seen imperiling themselves unnecessarily by climbing a guy or walking a narrow timber many feet above the ground. But the spirit of adventure is accounted for largely by the fact that a life of crime is one of risk and chance. When a delinquent steals a coat worth ten dollars, he gambles on his ability to elude detection and the value involved against one to eight years imprisonment. Or he may forge a check for a considerable sum and in this case he wagers the amount of the check with the vigils of peace and order against two to fourteen years that he will not be apprehended. So, we have the spirit of risk and adventure which is often coupled with the egotistic trait, playing a prominent role in the life of crime.

Another personal trait, resignation or in a more complete form fatalism, is especially characteristic of the recidivist. They show little sorrow or regret when they are told by the Board that they must remain another year before being released from prison. They rather consider this one of the decisions of the inevitable and patiently await the hour when by some turn of fate good fortune will be theirs. They feel they are what they are because the hand of predestination so decreed and are content to continue in what they believe to be their calling in life,—a criminal career.

Lastly, of the personal traits, sex perversion and unnatural love play a very important role among imprisoned individuals. All forms of perversion, inversion and unnatural sex gratification are practiced regardless of the grade of intelligence. However, as a rule, the lower mental types are guilty of what is commonly recognized as the more degraded sexual abnormalities or irregularities. It is not infrequent that two boys

develop a very serious love affair, one playing the role of a Romeo and the other of a Juliet, with the same earnestness, fervor and painstaking interest that one sees daily between two individuals of opposite sex.

Conclusion

The general tendency of this dissertation, with its rather varied compilation of statistics, points to the fact that there is no marked overt difference between the mind of a criminal and an individual of a similar social status in normal society. The argument of the foregoing statement is sustained by the results of the tests given in the various tables (especially Table II and context following Table III). It is evident, however, that criminals as a group have a lower average mentality than an average group outside of prison. Also there are more eccentricities and anomalies in mental functioning, especially in the fields of will and emotion, than we find under normal conditions. This is either due to the fact that the abnormal life which prison induces has made them so; or being of such a type made it more easy for their apprehension and conviction while possibly their neighbor, because of being more favorably endowed, was able to escape. The latter reason has often been produced as a justification for the fact that the prison population sometimes shows a lower average in mentality than can be found in the normal population. In this connection, it should also be remembered that the lower the mental types, as a rule, the more common are aberrations in the fields of intellect, will and emotion, or an abnormal combination of two or more of these.

Long imprisonment has a tendency to accentuate the anomalies and eccentricities of mental functioning already mentioned and to precipitate the conditions of dementia and mental perversion of those so inclined; on the other hand it has little effect on the mental condition of prisoners of so-called normal mentality and the ament and near-ament groups.

In a general way, our statistics show a relation between the kind of crime and the type of intelligence. With the lower types, the offenses committed usually involve trivial sums and minor reasons for provocation. More concretely, it is not uncommon for a "D" or "E" type to be committed for manslaughter arising over some insignificant misunderstanding; while an "A" type may be committed for the same offense on which the fundamental principles of virtue and manhood were involved. Of course, it would not be a safe criterion to base a diagnosis, alone, upon the kind of crime of which an individual was guilty, but certainly the kind of crime and especially the conditions under which it was committed bespeak much as to the type of intelligence.

As has already been stated, one's vocation, or the lack of it,—or in short, one's industrial career—is indicative as to the type of intelligence. Nor here, would it be safe to conclude that because an individual has worked at a certain occupation, he belongs to a certain mental type, yet such information throws considerable light upon his general charac-

teristics and is even valuable as an aid toward a correct mental diagnosis.

Barring the criminal by accident or mishap, it is at least a fair presumption to say that all criminals have some sort of defect; but such defects are often so recondite that not until well planned verified and standardized tests of will and emotion are brought into conjunction with even better planned intellectual tests, shall we be able to accurately diagnose and judiciously prescribe for our delinquent brother.